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Serial no. 10/693,565
Filed 10/25/2003
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REMARKS

Status of claims

Claims 1-28 and 30-39 are pending in the present patent application. It is noted that in this response, none of the claims have been amended.

Claims 1 and 3-9

Claims 1 and 3-9 have been rejected under 35 USC 103(a) as being unpatentable over Stephenson (EP 526884) in view of Russell (5,446,487). Claim 1 is an independent claim, from which claims 3-9 ultimately depend. Applicant respectfully traverses the rejection as to claim 1, such that claims 3-9 are patentable for at least the same reasons.

Applicant argues that claim 1 is patentable over Stephenson in view of Russell for at least two separate reasons. First, Stephenson is not properly combined with Russell; that is, there is no motivation to combine Stephenson with Russell. Second, Stephenson in view of Russell does not teach all the elements of the claimed invention. Each of these independent bases of patentability is now discussed in detail.

Stephenson is not properly combined with Russell

Applicant first submits that Stephenson is not properly combined with Russell. In particular, there is no motivation to combine Stephenson with Russell. The Examiner has stated that combining Stephenson with Russell is motivated within the prior art to “accelerate[] drying of the ink deposited on the medium.” (Final office action, p. 3) That is, Russell discloses using a heated air flow to dry ink applied on a printing medium, such that the Examiner states that it would be obvious to modify Stephenson’s printing method to use the heated air flow of Russell to dry ink to “accelerate[] drying of the ink deposited on the medium.”

Applicant submits, however, that Stephenson’s entire disclosure is directed to thermal printers in which there is no need to dry the colorant placed on the medium. In particular,

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Stephenson does not employ liquid ink, so there is no need to modify Stephenson per Russell to dry such ink, since the colorant employed by Stephenson is never in liquid form, and thus does not require drying. Therefore, where the colorant employed by Stephenson never requires drying, there is no motivation to modify Stephenson per Russell to "accelerate drying," since drying is not needed. This is now discussed in detail.

Stephenson discloses two types of thermal printers.

In certain thermal printers, an array of thermal print head elements is disposed to drive dyes from a dye-bearing web into a dye receiving sheet. In others, resistive elements of the print head are selectively energized to create images directly on thermally sensitive media.

(Col. 2, ll. 16-21) Applicant discusses the latter type of thermal printers first. In thermal printers in which print heads are heated to create images directly on thermally sensitive media, there is no colorant, such as ink, that requires drying, such that there is no motivation to modify Stephenson to include the accelerated drying of Russell. Applicant has submitted herewith a Seiko reference that describes this type of thermal printing.

Miniature heating elements . . . are constantly pressed against specially treated paper. Heating of specific elements causes a thermochemical reaction to take place.

Thus, when using the thermal printhead of Stephenson to create images directly on thermally sensitive media, there is no colorant at all. Therefore, there is no need to dry colorant. As a result, there is no motivation to modify Stephenson per the colorant-drying approach of Russell.

Second, Stephenson discloses thermal printers in which dyes are driven from a dye-bearing web into a dye-receiving sheet. In such thermal printers, the dyes never enter the liquid state. Therefore, there is no need to ever dry such colorant. These types of printers are also known within the art as dye-sublimation printers. For instance, the Wikipedia reference submitted herewith describes this type of thermal printing.

A dye-sublimation printer (or dye-sub printer) is a computer printer which employs a printing process that uses heat to transfer dye to a medium

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Sublimation is when a substance transitions between the solid and gas states without going through a liquid stage In a dye-sublimation printer the printing dye is heated up until it turns into a gas at which point it diffuses onto the printing media and solidifies.

. . . .
Another advantage [of dye-sublimation printing] over inkjet is the prints are dry and ready to handle as soon as they exit the printer. . . . There are no liquid inks to clean up

Thus, dye sublimation thermal printing is a totally dry process. As also stated by the Kodak reference submitted herewith, such “thermal printers and media use a totally dry process and in-printer lamination that minimizes time delays” Therefore, when using the thermal printhead of Stephenson to create images by driving dyes into a dye-receiving sheet, the colorant (i.e., the dye) is never in a liquid state, but rather passes from a solid state to a gaseous state and back to a solid state. The process is inherently totally dry – the printed media are inherently “dry and ready to handle as soon as they exit the printer.” There is thus no need to dry the colorant. As a result, there is no motivation to modify Stephenson per the colorant-drying approach of Russell.

To summarize, then, the motivation stated by the Examiner to combine Stephenson and Russell is to “accelerate drying” of the colorant applied to the medium in Stephenson. However, Stephenson teaches a thermal printing technique that either (1) does not use any colorant; or, (2) uses a colorant (dye) that never enters a liquid state. Therefore, there is no motivation to modify Stephenson per Russell to accelerate drying, since drying is never needed in the first place in Stephenson. Because Stephenson is not properly modified per Russell, the claimed invention is not obvious over Stephenson in view of Russell.

Stephenson in view of Russell does not teach all elements of the claimed invention

Applicant second submits that Stephenson in view of Russell, as discussed by the Examiner, does not teach all the elements of the claimed invention. In particular, Applicant respectfully submits that the Examiner proffered a “sleight of hand” interpretation of Stephenson

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in view of Russell to elicit reading on all the parts of the claimed invention that is improper. This is now discussed in detail.

First, the Examiner has stated that Stephenson discloses a first part of the claimed invention: determining the property of air within an image-forming device, where power is supplied to a heating element of the image-forming device, and air flow generated by an air-moving device is heated by the heating element. The Examiner has second stated that Stephenson discloses a second part of the claimed invention: adjusting one or more parameters of the image-forming device based on the property of air determined, including maintaining a consistent air mass flow by the air-moving device. Therefore, the Examiner has identified (although Applicant does not necessarily agree with) Stephenson teaching air flow generated by an air-moving device of an image-forming device, where the air flow is heated by a heating element, and where a consistent air mass flow by the air-moving device is maintained.

Now, however, the Examiner has stated that Stephenson does not disclose a third part of the claimed invention: using the air flow heated by the heating element to dry colorant on media applied within the image-forming device. Rather, the Examiner relies upon Russell as teaching this part of the claimed invention. The Examiner then goes on to say that that it would have been obvious to "modify the assembly disclosed by Stephenson to further include a heating element . . . as disclosed by Russell." Therefore, the Examiner combines Stephenson and Russell to include two heating elements: Stephenson's and Russell's.

This is the "sleight of hand" that Applicant referred to earlier. The claimed invention is limited to three interrelated parts that all revolve around the *same* heating element. The Examiner cannot find the claimed invention in the prior art by using a first heating element (of Stephenson) in relation to determining a property of air and adjusting parameters of the image-forming device based on the property of air determined, and by using a second heating element (of Russell) in relation to drying colorant. This is because the claimed invention determines a property of air,

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adjusts parameters of the image-forming device, and uses the air flow to dry colorant all in relation to the *same* heating element.

That is, there is just one heating element disclosed in the claimed invention. By comparison, the Examiner employs two separate heating elements to read on the claimed invention: Stephenson's in the first two parts of the claimed invention, and Russell's in the third part of the claimed invention. As such, Stephenson in combination with Russell does not yield the claimed invention. The property of air determined in the first part of the claimed invention is in relation to air flow heated by a heating element, the parameters are adjusted in the second part of the claimed invention to maintain consistent flow of the air heated by this heating element, and this air flow as heated by this same heating element is then finally used to dry colorant on media.

By comparison, in Stephen in combination with Russell, as per the Examiner, the property of air determined in the first part of the claimed invention is in relation to air flow heated by the heating element of Stephenson, and the parameters are adjusted in the second part of the claimed invention to maintain consistent flow of the air heated by this heating element of Stephenson. However, in the third part of the claimed invention, this air flow is all of a sudden heated by a different heating element, that of Stephenson, to dry colorant on media. As such, Russell in view of Stephenson does not disclose the claimed invention.

In other words, the Examiner has failed to consider the claimed invention "as a whole," but rather has broken the invention into three different parts, and finding that Stephenson discloses the first two parts, and that Russell discloses the third part. However, this sort of obviousness analysis is improper. The Federal Circuit, for instance, has stated the following.

In making the assessment of differences, section 103 specifically requires consideration of the claimed invention "as a whole." Inventions typically are new combinations of existing principles or features. . . . The "as a whole" instruction in title 35 prevents evaluation of the invention part by part. Without this important requirement, an obviousness assessment might break an invention into its component parts (A + B + C), then find a prior art reference containing A, another containing B, and another containing C, and on that basis alone declare the

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invention obvious. Section 103 precludes this hindsight discounting of the value of new combinations by requiring assessment of the invention as a whole.

(Panduit Corp. v. Dennison Mfg. Co., 1 USPQ 2d 1593, 1595-96 (Fed. Cir. 1987)) The type of analysis that the Federal Circuit has prohibited in the Panduit decision is exactly the type of analysis that the Examiner has performed here. The Examiner finds Stephenson as teaching the first two parts of the claimed invention, in relation to Stephenson's heating element, and then finds Russell as teaching the third part of the claimed invention, in relation to Russell's heating element. However, such analysis is improper, and means that Russell in view of Stephenson does not disclose the claimed invention.

Finally, on a related note, Applicant submits that the Federal Circuit has stated that there is no suggestion to modify the prior art that uses a plurality of devices (i.e., here, more than one heating element) to arrive at an invention that uses only one device (i.e., here, just one heating element). In *In re Kotzab*, 217 F.3d 1365, 55 USPQ2d 131 (Fed. Cir. 2000), the Federal Circuit stated the following.

In this case, the Examiner and the Board fell into the hindsight trap. The idea of a single sensor controlling multiple valves, as opposed to multiple sensors controlling multiple valves, is a technologically simple concept. With this simple concept in mind, the Patent and Trademark Office found prior art statements that in the abstract appear to suggest the claimed limitation. But there was no finding as to the specific understanding or principle within the knowledge of a skilled artisan that would have motivated one with no knowledge of Kotzab's invention to make the combination in the manner claimed."

(Id.) Here, the Examiner has found two heating elements, Stephenson's plus Russell's, in relation to which the methodology of the claimed invention is performed (i.e., there is the heating element of Stephenson that is used for image-forming purposes, and there is the heating element of Russell that is not used for image-forming purposes). However, the claimed invention is limited to one heating element in relation to which its methodology is performed. Therefore, per the Kotzab decision of the Federal Circuit, there is no suggestion to even combine Russell with Stephenson

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on this basis. For this reason, too, Russell in view of Stephenson does not disclose the claimed invention.

Claims 2, 10-21, 23-25, 28, 30-31, and 36-39

Claims 2, 10-21, 23-25, 28, 30-31, and 36-39 have been rejected under 35 USC 103(a) as being unpatentable over Stephenson in view of Russell, as applied to claim 1, and further in view of Yamamoto (5,970,729). Claims 2 and 10-15 are dependent claims depending from claim 1, and therefore are patentable for at least the same reasons that claim 1 is, as has been described above. Claims 16, 21, 28, and 31 are independent claims limited similarly to claim 1 in particular relation to patentability over Stephenson in view of Russell. Because these claims were rejected over Stephenson in view of Russell, as applied to claim 1, and then further in view of Yamamoto, they are patentable for at least substantially the same reasons that claim 1 is, as has been described above, and which are not repeated here to avoid redundancy. Claims 23-25, 30, and 36-39 are dependent claims depending from claims 16, 21, 28, and 31, and therefore are patentable for at least the same reasons that their base independent claims are.

Claims 22 and 32-34

Claims 22 and 32-34 have been rejected under 35 USC 103(a) as being unpatentable over Stephenson in view of Russell and Yamamoto, and further in view of Ishikawa (6,511,146). Claims 22 and 32-34 are dependent claims, depending from claims 21 and 31, and therefore they are patentable for at least the same reasons that claims 21 and 31 are, as has been described above.

Claim 35

Claim 35 is rejected under 35 USC 103(a) as being unpatentable over Stephenson in view of Russell and Yamamoto, and further in view of Wimmer (4,662,622). Claim 35 is a dependent

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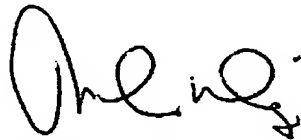
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claim depending from claim 31, and therefore is patentable for at least the same reasons that claim 31 is, as has been described above.

Conclusion

Applicants have made a diligent effort to place the pending claims in condition for allowance, and request that they so be allowed. However, should there remain unresolved issues that require adverse action, it is respectfully requested that the Examiner telephone Mike Dryja, Applicants' Attorney, at 425-427-5094, so that such issues may be resolved as expeditiously as possible. For these reasons, this application is now considered to be in condition for allowance and such action is earnestly solicited.

Respectfully Submitted,



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Date

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